



**BONNEVILLE POWER ADMINISTRATION
INDUSTRIAL HYGIENE ACTION PLAN FOR
LINE MAINTENANCE OPERATIONS ON THE FORMER W.R. GRACE
VERMICULITE MINE PROPERTY
LIBBY, MONTANA
SITE VISIT and TESTING: MAY 20 TO 21, 2003
REPORT DATE: JULY 30, 2003**

SUMMARY

Bonneville Power Administration's (BPA's) Spokane Region, requested assistance from Marine & Environmental Testing, Inc. (M&ET) in determining asbestos exposure potential for BPA line crew performing line maintenance activities in Libby, Montana. The BPA right of way (ROW) runs through the former W.R. Grace vermiculite mine located in Libby, a site that is now recognized as an asbestos-contaminated site.

Personal air monitoring was conducted on two line crew staff conducting line maintenance activities on May 20-21, 2003. The data provides a "Negative Exposure Assessment" for the tasks evaluated. No asbestos overexposure was detected in the personal exposure samples (four full-shift time weighted average and three excursion, 30-minute samples). Three composite soil samples taken from the right of way contained actinolite asbestos (1.15 to 1.79%). One rock sample taken from the right of way did not contain asbestos.

BPA will continue to work with the EPA in recognizing the potential for asbestos exposure. The action plan provided in this report will provide BPA with a platform to best protect employees while it meets EPA's goal to prevent non-remediation employees from entering the "exclusion" or "Hot" zone and from tracking asbestos contaminants off-site.

Conclusions from the May 20-21, 2003 Sampling and Analysis:

Personal sampling was conducted on line crew staff using pre-calibrated SKC medium flow sampling pumps attached using tygon tubing to open face 25-millimeter (mm) 0.8 micron mixed cellulose ester filters with a non-conductive cowl. Pumps were calibrated to approximately 2 liters per minute (lpm) airflow for both full-shift and 30-minute excursion level samples. Full shift samples were initiated at approximately 7:30 AM as personnel entered the Rainy Creek Road gate and ran through 2:45 PM. Each employee wore a second sample pump in order to evaluate excursion level 30-minute exposure levels during brush clearing (chainsaw use), pole inspection and light excavation work using hand shovels as well as a closed cab backhoe. Pumps were hung on disposable duct tape belts with the sampling filters secured on the lapel within 12 inches of the mouth and nose (breathing zone level). Personal air sample filters were initially analyzed using NIOSH Analytical Method 7400A using PCM. Positive confirmation for the presence or absence of asbestos on personal air filter samples was achieved using TEM (proposed EPA Level II method). Soil and dust bulk samples were analyzed using TEM and soil analysis used a modified Chatfield method. Bulk rock analysis used PLM.

Five bulk samples were collected from the right of way during this evaluation: This included one 2-pound rock (Bulk 4); one rock dust sample (Dust 1) from debris scraped off another rock that contained white mineral deposits; and three composite soil samples.

All of the bulk samples were taken on the right of way adjacent to patrol activities. The rock sample was collected in a zip lock bag and double bagged for shipment to R.J Lee Analytical lab. R.J Lee Group Lab was chosen for its expertise in asbestos analysis and its certification with the AIHA (American Industrial Hygiene Association) for polarized light microscopy (PLM) (bulk asbestos samples) and Phase Contrast Microscopy (PCM) for personal air samples.

Personal Air Results and Discussion:

PCM analysis of six of seven personal air samples detected potential asbestos fibers. TEM analysis subsequently determined that all but one fiber was non-asbestos. PCM analysis determined that full shift exposure levels ranged from 0.0124 to 0.0462 fibers per cubic centimeter of air (f/cc) for both employees, over approximately 340 minutes of sample time. These exposures ranged from 0.0048 to 0.0327 f/cc as 8 hr TWA (Time Weighted Averages), well below the OSHA's PEL (Permissible Exposure Limit) of 0.1 f/cc as an 8 hour TWA. One employee's excursion exposure levels during light excavation work inside the closed cab backhoe ranged from 0.0493 to 0.1247 f/cc. The other employee's excursion sample using a shovel (Asb6E) showed no detectable fibers by PCM analysis.

TEM analysis detected one chrysotile fiber on one employee's May 21st full-shift personal air sample (Sample Asb8). This was a 333-minute sample giving him an exposure concentration of 0.0069 structures per cubic centimeter (s/cc) or 0.0048 s/cc as an 8 hour TWA (Time Weighted Average).

TEM analysis of three soil samples taken adjacent to pole inspection sites contained actinolite asbestos ranging from 1.12% to 1.79%. EPA and OSHA have defined asbestos containing materials (ACM) as any material that contains more than 1% asbestos so, therefore, the sampled soils should be considered as ACM.

Line maintenance activities on the former Libby mine site *did not* create airborne asbestos exposures for the two employees conducting pole and right of way inspections. The soil on the right of way does, however, contain asbestos that could become airborne during other work activities.

This survey can be considered a "Negative Initial Exposure Assessment" in accordance with the OSHA Asbestos Construction Standard, 1926.1101 (f) for the activities monitored.

BPA ACTION PLAN FOR ENTERING AND EXITING MINE SITE:

All BPA employees entering this site shall be currently trained as hazard class IV asbestos workers.

All employees entering this site via Rainy Creek road shall enter using Level C personal protective equipment as currently required by EPA.

BPA employees will use disposable outer clothing in order to reduce the risk of transporting asbestos from dust-generating activities. This shall include Tyvek disposable suits, boot covers or washable boots and disposable gloves. All disposable garments shall be disposed of in accordance with current BPA protocols.

BPA employees shall wear respirators during activities that require excavations or disturbance of soil. Employees will follow BPA existing protocols for tight fitting half or full-face piece air-purifying respirators equipped with N or P-100 high efficiency particulate air (HEPA) filters respirators. Respirator use is not required but is strongly recommended for employees on routine line patrol where only visual inspections are done and where the employees remain confined within the their patrol vehicles.

BPA Line Maintenance crews will schedule routine maintenance and patrols during wetter months of the year when ever possible to help mitigate airborne dust-generating activities.

BPA will employ use of wet methods whenever possible in order to minimize dust levels during line maintenance activities conducted on the right of way. This will include wetting down soil prior to digging around poles or road maintenance activities using a truck mounted pressurized pumper or hand sprayer with a dilute water/detergent solution.

BPA vehicles and equipment that will be used along a corridor with known levels of asbestos contamination shall be decontaminated before leaving the mine site. BPA will contact the EPA on site coordinator for assistance in the decontamination of BPA vehicles. In instances where EPA contractors are otherwise obligated and not operating at the former mine site BPA maintenance crews shall make arrangements to insure this process is completed.

BPA will conduct Exposure Assessments for additional tasks conducted by BPA on this site. This would include assessments for tasks that disturb soil.

Make available information for BPA staff concerned with potential past asbestos exposure. This would include information on occupational medical screening as well as updates from EPA on the status of exposure evaluations for Libby residents and former mine site employees.

DATA TABLE 1
AIR MONITORING RESULTS
BONNEVILLE POWER ADMINISTRATION
LIBBY, MONTANA RIGHT OF WAY
MAY 20-21, 2003

Type of Sample	Sample No.	Sample Time minutes	PCM Results f/cc	TEM Results s/cc	Comments
Personal Airborne Samples: Full Shift					
Employee #1	Asb 2	340	0.0462	< 0.0719 *	No asbestos detected by TEM. May 20 th Light excavation work wearing Level C level of protection
Employee #2	Asb 3	360	0.019	< 0.0071 *	No asbestos detected by TEM. May 20 th pole inspection and patrol activities wearing Level C level of protection
Employee #1	Asb 7	335	0.0355	< 0.0075 *	No asbestos detected by TEM. May 21 st Light excavation work wearing Level C level of protection
Employee #2	Asb 8	333	0.0124	0.0069	One chrysotile fiber detected by TEM during May 21 st pole inspection. Employee wore Level C level of protection
Personal Airborne Samples: 30 minute Excursion					
Employee #1	Asb 1E	30	0.1247	< 0.0719	No asbestos detected by TEM. May 20 th Light excavation work wearing Level C level of protection
Employee #1	Asb 5E	30	0.0493	< 0.0687	No asbestos detected by TEM. May 20 th Light excavation work wearing Level C level of protection
Employee #2	Asb 6E	30	< 0.0473 *	< 0.0719	No asbestos detected by TEM. May 20 th pole inspection wearing Level C level of protection
Published Exposure Levels					
OSHA			0.1		8 Hour Time Weighted Average
			1.0		30 Minute Excursion Exposure Level

DATA TABLE 2
BULK SAMPLE RESULTS
BONNEVILLE POWER ADMINISTRATION
LIBBY, MONTANA RIGHT OF WAY
MAY 20-21, 2003

Sample Number Type	Location	Results	Comments
Bulk 1 Composite Soil Sample	10 feet west of pole LD L1 5 A	1.79% actinolite asbestos	ACM
Bulk 2 Composite Soil Sample	6 inches south of pole LD L1 5A	1.15 % actinolite asbestos	ACM
Bulk 3 Composite Soil Sample	6 inches south of pole LD L1 5B	1.61 % actinolite asbestos	ACM
Bulk 4 Rock	Rock collected from the right of way	No asbestos	Non-ACM
Dust 1	Debris scraped from rock collected on right of way	No asbestos	Non-ACM